

Chapter I

Introduction

Background of the Study

Participation means involvement of people in many activities for certain purposes. The concept of participation in the mathematics classroom, especially as it relates to students from certain ethnic and language groups and economically disadvantage students. We are primarily concerned with seeking ways to develop approaches to mathematics education that are sensitive to the contexts and lived experiences of all learners. Having defined the scope of views on student participation. I should attempt to settle what student participation means in the context of this project leading figure in the field, Rudduck and flutter definition of student participation on is twofold firstly it takes (seriously) into account pupils view on their experience of learning, and what they identify as good and bad practices.

But participation does not need to be located towards the radical end of the spectrum to have positive effects for instance Doppelt (2004) has shown that even in non-participatory classroom designs, hands on activities were regarded as most influential by students. In his study, two different cohort of 150 and 200. Pupils in secondary education consistently rated team projects, class discussions and laboratory experiments as more influential in their learning (whereas assessment activities and concept maps were at the bottom of the list)

Other disciplines can also help to explain the nature of learner participation. A recent influential compilation of educational neuro scientific finding from the OECD outline two fundamentally different drives to learn (2007). What educational neuro science recognise as extrinsic motivation is the use of rewards and punishment in

educational institution can be linked to the foucauldian concept of an integrated system of discipline (foucault,1977).On the other hand intrinsic motivation is what stems from the human brains natural drives to learn in order to “fulfill internal needs and desires (OECD 2007:71)”

In particular we are concerned by how to developed classroom teaching environment that promotes the mathematical participant of all students. In our local context we work with students who are often left behind in the academic journey. We present two cases located in geographically very distant settings. They share essential characteristic. However that point to problematic arises that transcend borders, especially in references to how certain groups of students such as immigrants members of specific ethnic and language group and economically under privileged students are viewed by the educational systems in place. These two cases illustrate the effect of social and origination structures on student's participation in the mathematics classroom.

Student involvement creates and model inclusive environment where students find opportunities for personal and professional development. Participation is very important part to get achievement in mathematics learning. If the student doesn't actively participate in mathematics he /she cannot get achievement in learning. Mathematics is a technical subject which needs more practice in high attention to learn. Achievement is determined by different variables such as school related variables, students related variables and house related variables and so on. These variables determined the achievement obtained by students.

A research conducted by CERID found that main achievement student in basic level school at national level in four core subject are:34.29 in English,28.87 in mathematics,60.80 in Nepali and 29.20 in science. The student have performed poorly

in mathematics and science .When compare general pass marks of 32 for further the student has achieved the highest main score in Nepali and lowest in.

A several types of diversity exist in Nepal geographically it divided in to three regions; Mountain, hill and Terai belts. The life styles of people differs according to the different economical belts in Nepal is a multi-linguistic, multiethnic and multi-cultural country .The remarkable numbers of the followers of the religions such as Hindu, Buddhism, Muslim and Christianity and different religious believes are also living in the country that co-exist with harmony and religious tolerance. Resource shows that there are about the hundred languages and other mono dialects .A famous statement according to contemporary king Prithivi Narayan Shah found appropriate that "Nepal is the Garden of four varna and thirty six caste". As, Newar, Magar, Gurung, Tharu, Limbu, Rai, etc. comes as the main ethnic caste in Nepal. Sonaha (gold panners) also a existing caste .

Sonaha (Gold panners) is taken marginalized and disadvantage group. Sonaha community has their own tradition, language, culture and occupation, gold panning and fishing is their traditional occupation. They are indigenous community with their own culture, tradition and occupation but they are not enlisted as indigenous people by the Nepal government. They are backward not only in the field of education but also to solve even hands to mouth problems too. Being alive they spent their most of the time in the bank of the river for fishing as well as to collect small piece of Gold from the sand by using materials. Now a days they are going to improve their life by involving different kinds of works like as, business, shopping .They also earn money from foreign country. This group has been found in Bardiya, Kailali, Kanchanpur. Where Seti zone Kailali district along Karnali river, Bheri zone Surkhet and Bardiya

district. FIAN Nepal is working with Soanaha community for their identity and protect of traditional occupation.

Statement of the Problem

Nepal is one of the multi-communal and Multi ethnic countries .There is equal access to education for all to the caste an ethnics by the causes of their interest, possibilities a geographical situation and socio economic condition. Sonaha is also marginalized and disadvantage ethnic group with their different culture and social value system in their culture, early marriage, sharing of alcoholic are common. Researchers experience himself in context education. Sonaha were small participate and lowest achieve in mathematics than other caste .But now a days situation is a abit improve .Hence, the researcher chooses this field to get answer of these questions :

-) What is the participation and achievement level of Sonaha student in mathematics?
-) What is the relation between the mathematics achievement and participation of Sonaha student in mathematics?

Objectives of the Study

The study was intended to accomplish the following objectives:

-) To find the level of participation of Sonaha (gold panners) students in mathematics.
-) To analyze the relationship between participation and achievement of Sonaha (gold panners)students in mathematics

Significance of the Study

For the sake of better life everyone should study mathematics and gain better achievement. For the better achievement there should be positive attitude from every aspect of towards mathematics.

Legally, there are not any barriers of ethnic group in learning mathematics education .But due to the ethnic group and other environment affects participation and achievement of Sonaha student in the mathematics education in Bardiya district.

Researcher more familiar with Sonaha society since his living in the same location and getting good opportunity to observed their problem directly. The weakness of Sonaha student that is seen in mathematics. Since, research herself involved in education sector .He shows the lower achievement of Sonaha students as compared to other caste of students. Hence, researcher wants to know what the participation level of Sonaha student is as this two words: participation and achievement are intended, interrelated with each other and also achievement is affected by participation. This study would have following implication:

-) This study would help to know about inter relationship between the participation and achievement seen in this teaching process.
-) This study would help to distinguish the positive or negative correlation between them and increase their participation level if seen to be positive as else help to detect the next main problem behind the low achievement seen.
-) This study would help to increase the average achievement developing the habit of discovery problems related to teaching process .
-) This study would help to encourage to Sonaha student to study the mathematics .

-) The study would help to bring positive attitude in equal opportunity in learning mathematics.
-) The research would help the basic procedure for carrying out the researches to any other fields or level.

Delimitation of the Study

The study is conducted with in the following delimitation.

-) This study was conducted only in Bardiya district.
-) The study was carried out with in the certain particular area
-) The study was conducted only for the subject of mathematics
-) This study was limited only among at basic level students.
-) This study was limited only Sonaha students .

Operational Definition of Terms

The term related to this study were defined operationally and explained as follows :

Achievement. In this study achievement is defined in terms of mathematics score obtained by the selected Sonaha student in basic level examination hold in grade VIII.

Participation. The term participation is defined as a total activity of student that support their learning such activities includes who is attending class. Interacting with teacher in the classroom, interacting with peers do homework and classroom.

Level of Participation. In this research three level of participation is accessed. These levels include high medium and low participation in mathematics learning.

In observation, the researcher observed sample school during period Shrawan15 to Bhadra5 in sample school. Researcher gave score for each activities. If they do then total scores was counted and this score was counterered into percentage by this the level of participation was defined as above 75% is high, 50% - 75% medium and Below 50 is Low.

Sonaha (Gold Panners). Sonaha is marginalized and disadvantage ethnic cast these live in some terai district (Bardiya, Kailali, Kanchanpur)

Ethnic. Of or relating to large group of people classed according to common racial, national, tribal, religious, linguistic or cultural origin or background.

Chapter II

Review of the Related Literature

This chapter deals with the literature cited. Before and during the study period related to this study mainly the literatures were previous thesis as an article abstract, journals and some document from CERID (1980).

Review of Empirical Literature

Literature review is the detail analysis of the previous studies relates to the present study below are some of the reviews of this studies which are relevant the present study.

Budhathoki (2006) conducted a research on "a comparative study on student achievement in mathematics of basic level in different ethnic groups". The prime theme of this study is to explore the mathematics achievement of Barmin, Kshetri and Magar student at basic level grade in Rukum district and make comparative study of this achievement. The population of this study is assumed as the student studying at grade VIII out of 74 school were taken as a sample which is 25% of the universe in the district. 329 student of Brahmin, Kshetri and Magar student (71 Brahmin, 143 Kshetri and 115 Magar) were choose as sample for this study. The result of this research shows that the mean percentage of mathematics achievement of barman, Kshetri and Magar student were found to be 31.76%, 28.27% and 26.27% respectively. Brahmin student achieved significantly higher than Kshetri and Magar student and district level examination 2061.

This study has found out of that there is significant different in mathematics achievement of Brahmin, Kshetri and Magar student at lower school in the district.

Chopra (1964) has studied the relationship of socio-economic factors with achievement of the student in the secondary school. The investigation aimed at studying the relationship between socio-economic factor and academic achievement with measured intelligence held. Constant some of the important findings have been listed below, the percentage of failure among the student from the professional administrative educative and managerial groups was twenty seven while that for the other groups ranged between fifty nine and sixty one.

On the basis of fathers education and occupation family income, type of lodging size of the family, cultural level of home, students belonging to the qualitative groups showed significantly higher mean achievement than students coming from lower ceremonies. The difference between the academic achievements of different caste was significant at 0.5 levels. The group of difference castes matched for father's occupation didn't show significant difference in achievement.

Student of rural area more affected by their environment than students of urban areas. Girls are more affected than the boys because of environmental factors in mathematics learning. The student of urban areas is motivated and gets high achievement in mathematics. Student of so called low castes and class show low participation in interactive mathematics class. Poor mathematics achievement causes mathematics anxiety and affect negatively in regular mathematics learning. Better environment at home, school and society stimulates the mathematics learning attitude of the student.

Bhagat (2007) did a research on a study on mathematics achievements of primary level students of Rai and Tharu castes in Udhaypur district. The researcher selected nine public schools and the purposive sampling method was followed in the selection of a sample. He selected 216 student (108 from Rai and 108 from Tharu

student) the main objectives of this study was to find out the difference in mathematics achievement of Rai and Tharu students for this T-test with two tailed was used to test the research hypothesis at 0.05 level of significance. His conclusion was the achievement of Tharu students is higher than Rai students. Education development service Centre (EDSE) 1997 studied on the topic national achievement level of grade three students. After studying EDSE found that achievement scores of private school student were found more than public school student. EDSE also found many other influencing factors in the student achievement those factors were student, teacher and parents influenced positively in the better achievement of their children.

Pradhan (2007) conducted study entitled "student achievement in mathematics of Tanahun district based on the 200 student at grade VII mathematics achievement test. He includes that the achievement level of the seventh grade students in mathematics of Tanahun district was 39.06. There were significance difference in the achievement among the four areas of the mathematics. students felt static and arithmetic easier in comparison to algebra and geometry. There was better performance of boys over the girl's achievement in every aspect in the area of mathematics except statistics.

Regmi (2004) did a research on a study of achievement in mathematics of Gurung and Kumal students at primary level the researcher selected eight public school and 128 students as a sample the main objectives of the study were to find out the difference in mathematics achievement of Gurung and Kumal students his finding is that the mean achievement between Gurung and Kumal student was significantly difference. The mean achievement between Gurung and Kumal boy students was not significantly. The mean achievement of Gurung and Kumal girl student was significantly different. The mean achievement of Kumal student speaking non mother

tongue is significantly differenced speaking than non-mother tongue. The mean achievement of Gurung students speaking non mother tongue is significantly different speaking than mother tongue.

CERID(1980) did a research on achievement study of primary school children including the three district from each four development region (eastern, central, western and far-western) researcher found that student are found to do poorly in the test on comprehension. Writing sentence with understanding and dictation exercise. The performance of student were in understanding the place value of numbers the concept of fraction and the application of four fundamental rules.

Review of the Theoretical Literature

Many theories about the learning and development of children such as cognitive, behaviorist, humanist, socio-culture of which is on of the theories to analyze and interpret the data of mathematics or resolve the problem. To analyze and find the suitable solution in the area of low participation and achievement in mathematics, socio-culture one of the possible theory to solve the problem of the topic of achievement and participation in mathematics of Sonaha students. Every child learn from society, from social contact with home, family and universe.

According to Cobb (2007), theoretical contribution in the field of mathematics education have come primarily from four traditions: experimental, psychology, cognitive psychology, distributed cognition and socio-cultural theory. This study draws primarily on socio-cultural theories of learning because of its explicit emphasis on theoretical assumptions regarding social and cognitive development that hinges on participation in cultural practices (e.g., language socialization through participation in classroom discourse, or understanding of mathematics from informal, out of

classroom experience, etc). Moreover, data collection and analysis focused on the processes by which students became participants in various roles and to various extents in mathematics discourse related to rational number tasks .

Socio-cultural theories of mathematics learning are generally associated with the seminal work of vygotsky (1978) and prioritize the socially and culturally situated nature of mathematical activity over individual sensory-motor functions (cobb,1994). Vygotsky (1978) identified three general terms fundamental to his theory of development a) higher mental processes can be best understood by focusing on how and when they occur, b) higher mental processes, such as memories concepts, and reasoning, originate between people on the social plane before appearing in the individual on the psychological plane; and c) higher mental processes are mediated by cultural tools and signs such as language, writing and symbols.

Vygotsky claimed that all higher mental activity originates through a process of internalization, or what some scholars refer to as "appropriation" (Cazden, 2001), which he described as the process by which individuals engage in cultural practices on the inter mental plane (i.e., through social interaction) before gradually performing these practices independently on the intra mental plane (i.e., through internalization). The transformation between the social and psychological planes occurs within a zone of proximal development-the space between and individual's independent capabilities and his or her immediate mental potential. In other words, the zone of proximal development is determine by both the child level of development and quality of instruction provided to the child (wertsch, 1985). It is in this space that social interaction between of a novice and more knowledgeable others can lead to intercalation of higher mental functions. Vygotskin learning theory, and in particular his contributions regarding the zone of proximal development, essentially paved the

foundations for cooperative learning as a viable instructional approach in modern classroom setting (Schunk, 1996).

Other researchers have extrapolated vygotsky's work into theories that rely on and apprenticeship metaphor (e.g., Lave & Wenger, 1991, Rogoff, 1990), specifically stating that learning occurs in social interaction between novices and more skill others through increasingly greater degrees of legitimate participation (Lave and Wenger, 1991) . In other words learning is defined, in part, as a positive change in participation in set of cultural practices. For example, while co-participating in mathematics discourse communities, teachers or more –able peers initially take a major role in sharing their reasoning aloud.

Over time, novice students evolve from relatively marginal or peripheral roles to more autonomous roles through successively greater degree of participation in the community of practice. Wertsch (1985) draws an important distinction between apprenticeship and school-like instruction . Apprenticeship learning, which derive from labor activities settings, intentionally organizes interaction so that the expert assumes a majority of the responsibility for executing tasks in the earliest of interactions. Therefore, initial interactions of this type might be informed by the assumption that efficient error-free execution is of the highest priority, rendering the novice capable of only executing the easiest steps involved in successfully mastering a task.

On the other hand, school-like learning, which derives from instructional activity setting, might intentionally structure interaction. So that novices can learn for the sake of understanding by participating freely in all aspects of the task. The important distinction between apprenticeship and school like settings is that since

learning is prioritized in the school-like setting, errors and mistakes are viewed as necessary steps toward true mastery of the task.

According to Empson (2003), understanding classroom discourse and how it “structures students” (p.306). Participant frameworks (Goffman, 1974, 1981) can be used to explain how discourse organizes social interaction, or specifically how student and teacher talk animates individuals into certain intellectual roles or identities, such as answer-supplier, evaluators, claim-makers, listeners, solution- reporters, questioners, etc.

According to O’Conner and Michaels (1996), the teacher in a mathematics discourse community facilitates language socialization and role-taking by orchestration interaction among the group, which aims to get students to “identify themselves as people who solve problems, construct arguments, justify claims, generate conjectures, and communicate with others formally and informally about their mathematical thoughts” (Empson, 2003). All members within a learning community position themselves and others as participants in myriad ways, but primarily through markers such as verbal and non-verbal language. For example, when a student asks a peer, “But why did you divide by one-half when there were two people sharing the cake?” the student is positioning his or her peer as a defender of and clarifier of a mathematical claim.

In other words, the specific language used by one participant prompts another participant to assume a special role in discourse, in this case a justifier and clarifier. In short, a participation framework at any particular moment in classroom discourse is “the amalgam of all members’ participation statuses relative to the current utterance” (O’Conner & Michaels, 1996).

According to Goffman (1974), the traditional dyadic categorization of speaker and hearer grossly misconstrues “the range of ways that humans use talk to create alliances and oppositions and to connect utterance acts with various participants” (O’Connor & Michaels, 1996, p.69). Rather than thinking of a single speaker, Goffman contends that most utterances involve a principal (the person who is the source of the original content whose position has been established), author (the person scripting the lines), and animator (the person who renders another as a figure) and goes on to suggest that rather than thinking of a single listener in each case to instead view the audience as a group of both addressed and unaddressed recipients (Forman & Ansell, 2002; O’Conner & Michaels, 1996).

Before considering the importance of classroom participation it is first necessary to define the term Wade(1994)considered the ideal class discussion as one in which all students were participating learning and listening to others ideas comments and questions with this definition it seems that it would still be possible to be passively engaged in the classroom experience. The intent however is to some how force or preferably motivate students to become actively engaged in what is occurring in the classroom. Isenberg (1991) proposed small group discussion. He stated that in these small groups, students “feel like they are becoming members in the discursive community ” As Mortimer ladler once noted (All genuine learning is active, not passive. It involves the use of the mind, not just the memory. It is the process of discovery in which the student in the main agent not the teacher .The challenge for teacher becomes, how do you illicit the type of active participation and healthy exchange of idea that we expect in a college classroom.

Melvin and lord (1995) noted that “class participation ranks among the most complex and subjective academic performances to evaluate” while assessment of

student interaction may be a useful motivator, it could be argued that this is only true in cases where the instructor clearly defined how such grade will be assigned and according to what criteria. Lyons, (1989) warned that objective measurement of classroom participation is difficult. Instructors own personal biases and opinions may affect. How they assess student participation (Armstrong and Boud, 1983) to avoid the effects of such biases Armstrong and Boud suggested that instructors should distribute clear and explicit criteria which will be used to assess participation to students at the beginning of the semester (1983). Should classroom participation make up for poor performance on graded events? to what extent should classroom participation be allowed to offset a lack of understanding demonstrated through more traditional assessment? How well does a lack of classroom participation correlate with poor academic performance and vice-versa.

This is not to suggest that each of these entities represent mutually exclusive social roles for separate individuals – of course, at times during conversation, it is possible for a single speaker to assume each of these three roles simultaneously (Goffman, 1981). Empson (2003) argues that lower-performing students' success in discourse communities depends on the teacher's ability to provide space and meaning for students' contributions. Many researchers explain the struggle of lower-performing students' ability to participate in discussion-intensive instructional setting as a function of socio-cognitive traits, such as a child's limited capacity for listening and responding to others' high-level explanations (e.g., Baxter et al., 2001, Lubienski, 2000a, 2000b, Mulryan, 1995).

However, Cohen and Lotan (1995) suggest that even low-performing or low-status students' degree and quality of participation in discourse can increase when teachers orchestrate their interactions skillfully, (e.g., praising a student's contributions

during task work, using effective scaffolding practices, etc.). Thus, the teacher's role in facilitating discourse is paramount, but that is not to say that students themselves play a marginal role in producing quality verbal interactions.

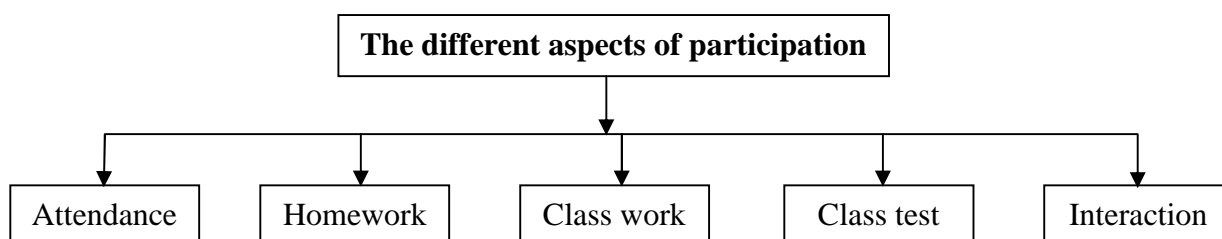
The few studies to date that have employed participant frameworks as a method of analyzing discourse have focused almost exclusively on teacher-to-student interactions, giving priority to the teacher's role in facilitating discussion among students; this study used participant frameworks as lens to analyze discourse that emerged not only between the teacher and students, but primarily among the students themselves in both whole-class and small-group instructional contexts. Studies that have moved beyond pigeonholing low-performing students as incapable of engaging in productive discourse with teachers and peers underscore the usefulness of adopting analytical lenses like participation frameworks within the context of mathematics.

Conceptual Framework of the Study

The theoretical framework guiding this study is decidedly socio-cultural the perspective on learning and development by Vygotsky (1978, 1986), Wertsch (1985), Lave and Waenger (1991) and White (1996) were all influential both in shaping the practice of community that was created during this study and in finding research tools to answer are questions. A fundamental tenet of socio-cultural theory is that all internal psychological process originate in purposive social interaction among human being within an environment in which cultural tools and artifacts are present. Learning and development occurs while the learners interactive with the more knowledgeable member of community within specific social, cultural and historical contexts. Culture is the sum of past and present and it is the base human psychological that affects in everything as in learning. Heredity, environment and class are three things which shape the psyche of the people. The social environment includes the

people's behavior of the society, their social status and social structure. Man is social animal and so his behavior is ever shaped by the society. The ways they speak, eat, think and behave affect the other people of society. Every function in the child's cultural development twice : first, on the social level and later on the individual level.

The achievement seen low in case of Sonaha students how is participation level such as attendance, homework, class work, class test and interaction. This important expect of achievement, there are many elements which influence their education such as individual, social, economic and school's environment. If their family background is good, social status good, economic status good and school's environment is good. We can say these all elements are helpful to progress in educational achievement otherwise lack of these all elements there may be negative impact and their educational achievement also be poor. As per the main measurement base of student's participation level, to find student's participation the aspects such as attendance, homework, class work, class test, interaction has been studied separately. The level of participation of influenced by different aspects. The participation of students activities determine the increasement and decreasement of level of participation. The given diagram shows the different aspects of participation.



The participation is influenced by different factors. There are several causes that bring low participation and achievement in mathematics of Sonaha students. Home is the first school of the home environment plays the vital role in learning mathematics. Parents education and their behavior affects in learning. Language is the means of communication. So language has vital role in learning mathematics.

Chapter III

Methods and Procedures of the Study

This chapter describes the design of plans and procedures of the study which will carry out to achieve the objective of this study. Method presents the logistic the study because it determine how research becomes complete and systematic.

Design of the Study

A research design or study design is the survey and strategy of investigation, which is a complete scheme or program of the research. The design of the study was survey in nature followed by both quantitative and qualitative approach.

The Population of the Study

The population of study was consisted of all the Sonaha students who are studying at basic level in Bardiya district in academic year 2073. The Sonaha students of mathematics of grade VIII of these schools are population of the study.

Sample of the Study

The researcher had been selected in 10 school by the method of randomly and 100 Sonaha students by simple random sampling from basic level specially the student of grade VIII. The low achiever Sonaha students were taken for interview to find out cause of factors affecting participate in mathematics.

Data Collection Tools

For the data collection the researcher developed set of questionnaires and interview paper to find the participation and achievement level of Sonaha students an observation form to find out the participation level of Sonaha students which observe

class attendance, H\W, C\W, C\T and interaction level (with teacher and other student) of Sonaha students. Likert scale was developed by the researcher which use to find out the participation level of Sonaha students. There was five option in likert scale and to find achievement level, the students hold score of final examination. The following techniques also used during field study in this research work.

Questionnaires

A questionnaire is the list of questions pertaining to the investigation is the most widely used research tools while collecting data. Questionnaires refers a device for securing information in questions by using a form which the respondent verities or fills himself. Questionnaire was also necessary prepared to collect the factual primary data information from the target group. The respondent was requested to fill up the questionnaire. The set of questionnaire was used to find the level of participation of selected Sonaha students.

Interview Schedule

Interview as face to face interpersonal role situation in which one person the interview ask person being interview, the respondent questions design to obtain answers pertinent to the purpose of the research problem' this approach is one of the best known to collect data in short time.

Interview is the most effective method which is used in collecting primary data. It is medium to express internal thoughts, interests, concepts thinking of a person. It is a tool to find out the internal thought of person according to their looking activities, facial expression. Researcher used interview schedule to find out information from respondent student, teachers, and parents.

Reliability and Validity of Instruments

To ensure the good quality of the test the validity and reliability should be checked of the test. The content validity and reliability was approved from the research of Gita Aryal (2014). And also revalidated by mathematical education expert, schools subject teacher and thesis supervisor.

Data Collection Process

For the collection of data, the researcher visited selected school. For participation score which observed class attendance homework, class work, class test and interaction. The responsible administrative staffs of selected school's head teacher have been planned to request for the score of selected schools head teacher have been planned to request for the score of Sonaha student who appears their basic level examination in the year 2073 of grade VIII. The researcher prepared one set of questionnaire for students. This questionnaire was developed with statement capturing the themes of conceptual framework. One hundred students were given questionnaire to fill up. The information provided in questionnaire in the information obtained through interview were compared for the purpose of the study mathematics teacher, head teacher and parents. Also the questionnaire was developed in likert scale point techniques. The ten low participant student were also interviewed.

Scoring Process

On basis of Likert scale, researcher used the data of qualitative nature having reliable measurement of the particular behavior or psychological trait. After collection of the data the researcher analyzed the data obtained through observation, interview and questionnaire under the Likert scale. The based on questionnaire each of the statement in term of five degree of agreement and disagreement. The attitude or

opinion scale was analyzed in several ways. The simplest way to describe opinion was to indicated percentages responses for each individual statement. If a Likert type scale is used it was possible to report in percentage. There are one set of observation with rating options strongly agree, agree, natural, disagree and strongly disagree with rating score 5, 4, 3, 2, 1 respectively in each positive statement and 1, 2, 3, 4 and 5 in each negative statement.

Table 3.1: Likert-Scale Point Used in Techniques of Scoring

| S.N. | Rating | Marks for positive statement | Marks for negative statement |
|------|-------------------|------------------------------|------------------------------|
| 1 | Strongly agree | 5 | 1 |
| 2 | Agree | 4 | 2 |
| 3 | Neutral | 3 | 3 |
| 4 | Disagree | 2 | 4 |
| 5 | Strongly disagree | 1 | 5 |

Data Analysis Process

This study was concerned with participation of Sonaha students in mathematics and their affecting factors in participation. The researcher used instruments were one set of questionnaire to find out participation level of Sonaha students in mathematics and interview guide lines to find the causes of these factors affecting in participation. The information obtained by questionnaire. To analyze data by using likert scale summarizing data with percentage. The score from each category was compared and analyzed by finding mean, standard deviation, coefficient of variance and Karl person's coefficient of correlations.

Chapter IV

Analysis and Interpretation of Data

Data analysis is the most crucial part of and study. This study is the survey related to the participation and achievement of Sonaha. Students in mathematics at basic level (grade eight). The data were collected for the study 100 Sonaha students are selected from the ten schools of Bardiya district. The main objectives of this study were to find the level of participation of Sonaha students in mathematics and analyzed the relation between participation and achievement of Sonaha student in mathematics. The main tools asked from this study were observation, questionnaire also interview and related published and unpublished school documents. The main respondents of this study were selected Sonaha students, mathematics teacher and head teacher of the related school. The data obtained of the study are presented in term of following topics.

Participation of Sonaha students in mathematics

The first objectives of the study was to find the participation level of Sonaha students in mathematics for this researcher. By the research, the raw data were presented in a table below and the score was converted into percentage. After taking percentage, the participation level of student was defined as above 75% - high, 50% - 75%, medium & below 50% low.

Table 4.1 : Response given by Sonaha Student about Attendance

| S.N. | Question | S.A. | A | N | D | S.D. | Mean |
|------|--|------|----|----|----|------|------|
| 1 | You always present in mathematics class ? | 6 | 13 | 56 | 18 | 7 | 2.94 |
| 2 | You always be in the classroom during whole period ? | 5 | 14 | 61 | 11 | 9 | |

Source : Field Observation

This table shows the statement on the attendance aspects are response given by Sonaha student, which were given in consideration of participation of Sonaha students in mathematics. To obtain mean score of the statement, the researcher used likert point scale technique for positive statement. It is rated as 5, 4, 3, 2, 1 to strongly agree, agree, neutral, disagree, strongly disagree respectively and for the negative statement. It is rated as 1, 2, 3, 4, 5 to strongly agree, agree, neutral, disagree, strongly disagree respectively. From the table, it was observed that then total score was counted as mean 2.94 (Appendix E) and mean was converted into percentage and it was found 58.8 percent which is medium.

Researcher asked question to Sonaha student, "Why your attendance is low ? Then they answered s follows :

My parents limited me in household activities. They did not want to spent time in my study because parents think that literacy does not mean anything. So many attendance is low.

Again researcher asked question to the teacher on the basis of low attendance of Sonaha students "Why Sonaha students attendance is low ? he answered as follows:

Since Sonaha students attendance is low due to their involvement in household activities and other daily productive work.

After interviewing the researcher concluded that Sonaha students got low attendance. The causes behind it are lack of parent education, lack of good school environment, lack of study time in home environment, press of house workloads, lack of government policy for their empowerment.

Table 4.2 : Response given by Sonaha Students about Homework

| S.N. | Question | S.A. | A | N | D | S.D. | Mean |
|------|--|------|----|----|----|------|------|
| 3 | You do home work everyday ? | 3 | 8 | 59 | 21 | 9 | 2.73 |
| 4 | You always complete home work ? | 2 | 5 | 63 | 18 | 12 | |
| 5 | Teacher checks the home work every day ? | 4 | 12 | 54 | 16 | 14 | |

Source : Field Observation

The table shows that the different statement on homework aspects which were given in consideration of participation of Sonaha student in mathematics. From the table it was observed that then the researcher gave score by likert point scale. The total score was counted as mean 2.73 (Appendix E) and mean was converted into percentage and it was found 54.6 percent which is medium.

The researcher asked question to Sonaha students. Why did not you do home work regularly ? The answer as follows :

I am unable to understand the mathematics being irregular at school and have less confident to solve mathematics problem. Parents did not facilitated to do home work.

Again, the researcher asked question to teacher on the basis of home work "Why did not they do have work regularly ? then they answered as follows :

Since Sonaha students were irregular at school due to house work load, they did not give more time in reading mathematics at home, parents less facilities to do home work.

After discussion researcher concluded Sonaha students less homework due to domestic activities.

Table 4.3 : Response given by Sonaha Students about Class work

| S.N. | Question | S.A. | A | N | D | S.D. | Mean |
|------|--------------------------------------|------|----|----|----|------|------|
| 6 | You always do class work ? | 5 | 12 | 54 | 21 | 8 | 2.69 |
| 7 | You complete class work every days ? | 1 | 3 | 52 | 32 | 12 | |
| 8 | Teacher check classwork everyday ? | 3 | 9 | 58 | 16 | 14 | |

Source : Field Observation

This table shows the different statement on classwork aspects which were given in consideration of participation of Sonaha students in mathematics. From the table, it was observed that then the researcher gave score by the likert point scale then total score was counted as mean 2.69 (Appendix E) and mean was converted into percentage and it is was found 53.8 percent which is medium.

The researcher asked question to Sonaha students 'Why did you do less class work. They answered as follows :

I am unable to understand the mathematics being irregular at school and understand mathematics due to language, due to big class size teacher did not check my class work regularly.

Again the researcher asked question to teacher why Sonaha students do less class work then they answer as follows :

Since Sonaha students were irregular at school they find mathematics boring. They do not interact other students in doing class work. After discussion researcher concluded that Sonaha students do less class work due to absent in mathematics class. They do not discussed, interact and less engaged in during class work. So researcher found that constructivism theory should be there to improve it.

Table 4.4 : Response given by Sonaha students about Class Test

| S.N. | Question | S.A. | A | N | D | S.D. | Mean |
|------|--|------|---|----|----|------|------|
| 9 | You participate in each class test ? | 2 | 5 | 53 | 27 | 13 | 2.39 |
| 10 | You pass in every class test ? | 2 | 4 | 42 | 33 | 19 | |
| 11 | Latter test bring improvement than previous test ? | 0 | 2 | 47 | 24 | 27 | |

Source : Field Observation

This table shows the different statement on class test aspects which were given in consideration of participation of Sonaha students in mathematics. Based on question 9, 10, 11 the researcher gave score to each student then total score was counted as mean 2.39 (Appendix E) and mean was converted into percentage and it was found 47.8 percent in class test which is low.

The researcher asked question to Sonaha students why your result seem poor in class test ?

I am irregular at school and have less confident to solve mathematics problem. My parent did not manage tuition and all required material for study of mathematics.

Again, the researcher ask question to teacher why Sonaha student result seem to poor in class test ?

Since they were absent in mathematics class and they have less confidence in solving mathematics problem and also lack of practice.

After interviewing the researcher concluded that they have less confident is solving mathematics problem and due to anxiety.

Table 4.5 : Response given by Sonaha students about Interaction

| S.N. | Question | S.A. | A | N | D | S.D. | Mean |
|------|---|------|---|----|----|------|------|
| 12 | You always ask the question with teacher ? | 0 | 2 | 4 | 41 | 53 | 1.77 |
| 13 | You always reply the answer asked by teacher ? | 2 | 6 | 19 | 53 | 20 | |
| 14 | You do discussion about study mater with your friends ? | 1 | 2 | 3 | 46 | 48 | |

Source : Field Observation

This table shows the different statement on interaction aspects which were given in consideration of participation of Sonaha students in mathematics. Based on question 12, 13, 14 the researcher gave score by likert point scale. Then total score was counted as mean 1.77 (Appendix E) and mean was converted into percentage and it was found 35.4 percent which is low.

The researcher asked question to student why you did less interacts with peer group and teacher ? They answered as follows :

I was hesitating to interact with teacher because of my language and I was unable to interact with class friend due to their behaviour.

Again, the researcher asked question to teacher why Sonaha students less interacts with peer group and teacher ? They answered as follows :

They feel shy to interact with teacher they are not curious about their learning and they ignored it completely in which interaction is not possible.

From above discussion researcher concluded that Sonaha student less interact with peer group and teacher due to hesitation fear and language.

Table 4.6 : The total Average of Participation and Achievement of Sonaha**Students**

| Number of students | Participation | | Achievement |
|--------------------|---------------|------------|-------------|
| | Mean | Percentage | |
| 100 | 2.50 | 50.06 | 29.83 |

The given table shows aggregate mean 2.5 from the mean taken of Sonaha students in various aspects of participation. The converted aggregate mean of participation in percentage is 50.06. In overall the level of participation is medium whereas average achievement is 29.83 percent. The level of average achievement seems low.

Relationship between Participation and Mathematics Achievement

According to the research on participation and achievement of 100 Sonaha students in grade VIII, the different aspects of participation of like attendance, home work, class test, interaction on the basis of questionnaire. In mathematical achievement taken from final exam score, low participation was seen low achievement. In the same way high participation was seen high achievement. They had positive correlation.

Table 4.7: Mean Standard deviation and Correlation Coefficient of participation and achievement

| | Number of student | Average | Standard deviation | Coefficient of variance | Correlation |
|---------------|-------------------|---------|--------------------|-------------------------|-------------|
| Participation | 100 | 50.06 | 15.8989 | 252.78 | 0.972 |
| Achievement | 100 | 29.83 | 14.24 | 202.78 | |

The 100 selected Sonaha students were taken as the sample of the study from 10 school in this research. The average score in participation is 50.06 and the average scores in achievement 29.83. The standard deviation of the scores of mathematical participation is 15.8989 and that of mathematics achievement score is 14.24. So the standard deviation of participation seem to be more than a that of achievement score, but for the actual comparison between two variable of the researcher field to find the coefficient of variance which the mathematical participation is found 252.78 and that of achievement score is found 202.78 at last the most important value, the coefficient of correlation between mathematical participation and the mathematical achievement is found. The main part of this study is to find the coefficient of correlation between the students score in participation and achievement in mathematics. The coefficient of correlation was found 0.972 implies that there is high very high relationship between participation and mathematics score of students. Low participation, low achievement and high participation high achievement this shows that they have a positive correlation. The value can be described by associating with difference factor, participation level is low so achievement level low.

Chapter V

Summary, Findings, Conclusion and Recommendations

After the analysis and interpretations of the collected data according to design of study in this concluding chapter an attempt has been made to summarize and enlist the finding provide some recommendations for pedagogical purpose. The first section of this chapter presents the summary of the research. The second section presents the finding and conclusion finally the last section presents recommendation based on the finding of the study. Especially this chapter presents the summary, finding, conclusion and recommendation of the study.

Summary

This study is survey related to participation and achievement of Sonaha students in basis level in mathematics. The population of the study consisted of all the Sonaha student studying in grade eight (VIII) in Bardiya district in the academic year 2073. The sample school were chosen by the method of randomly 100 Sonaha students were the sample of this study chosen by randomly. The main purpose of this study was to find the level participation of Sonaha students and to analyzed the relation between participation and achievement of Sonaha students at basic level (grade VIII) in mathematics. The major tools used for this study were questionnaires form, interview paper and related published and unpublished documents.

Findings

The statistical analysis of the collected data yielded the following result as the finding of the study.

-) Participation level of Sonaha students in attendance was found 58.8 percent is medium.
-) Participation level of Sonaha student in homework was found 54.6 medium.
-) Participation level of Sonaha student in class work was found 53.8 which is medium.
-) Participation level of Sonaha students in class test was found 47.8 which is low.
-) Participation level of Sonaha student on interaction was found 35.4 which is low.
-) Average participation level of Sonaha students was found 50.06 which is medium.
-) Achievement level of Sonaha students in result of final exam grade VII according to mark ledger was found 29.83 which is low.
-) The coefficient of correlation between participation and achievement is 0.972.
-) In participation and achievement there is seen positive correlation.
-) The relationship between participation and achievement is high very high.

Conclusions

From the above finding, it is concluded that the students having high level of attendance homework, class work, class test and interaction have high achievement. In the same way, students getting low attendance homework, class work, class test and interaction have low performance. Low interaction of the students with peers and teachers have low achievement level.

Overall participation level on basic level of grade VIII students seem to be medium and achievement level low. The two variables, participation and achievement have positive correlation and high very high relationship.

At last, to improve the achievement in mathematics of Sonaha students.

Instructions to learning standard should be aligned, formative assessment should be included, consistent feedback should be provided feedback loop concept should be used, self-assesses regularly, new educational technology should be implemented, new teaching strategy (cooperative, inquiry, inductive) should be applied and effectively communicate with visual aids.

Recommendations

After conducting this study the researcher suggests some recommendations for the improvement in mathematical participation and achievement of Sonaha students.

-) In basis level in mathematics participation level of Sonaha students is not good which is affected in its achievement. So the related person and organization should focus for improving the participation level.
-) In basis level (grade VIII) mathematics achievement of Sonaha students is not good so the related person and organization should focus for improving the achievement score by implementing the aspects of the existing programme.
-) The government and other concern institutes has to implement attractive awareness programme for Sonaha students and their families to improve participation level of Sonaha students which helps in mathematics achievement of Sonaha students.

This study has been done only in mathematics in basis level of the Sonaha students. So, a similar study can be replicated in other subjects as well as other levels.

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Appendix A**List of Sample School in Baridya District**

1. Yakpriya Secondary School
2. Janata Secondary School
3. Kalika Secondary School
4. Kishan Secondary School
5. Pashupati Secondary School
6. Sarswati Basic Level
7. Dasharatha Secondary Level
8. Rastriya Basic Level
9. Gurash Secondary Level
10. Mangal Secondary Level

Appendix B

Students Questionnaire Form

School's Name :

Date :

Student's Name :

1. You always present in mathematics class ?

| | | | | |
|------|---|---|---|------|
| S.A. | A | N | D | S.D. |
| | | | | |

2. You always be in the classroom during whole period ?

| | | | | |
|------|---|---|---|------|
| S.A. | A | N | D | S.D. |
| | | | | |

3. You do home work everyday ?

| | | | | |
|------|---|---|---|------|
| S.A. | A | N | D | S.D. |
| | | | | |

4. You always complete home work ?

| | | | | |
|------|---|---|---|------|
| S.A. | A | N | D | S.D. |
| | | | | |

5. Teacher checks the home work every day ?

| | | | | |
|------|---|---|---|------|
| S.A. | A | N | D | S.D. |
| | | | | |

6. You always do class work ?

| | | | | |
|------|---|---|---|------|
| S.A. | A | N | D | S.D. |
| | | | | |

7. You complete class work every days ?

| | | | | |
|------|---|---|---|------|
| S.A. | A | N | D | S.D. |
| | | | | |

8. Teacher check classwork everyday ?

| | | | | |
|------|---|---|---|------|
| S.A. | A | N | D | S.D. |
| | | | | |

9. You participate in each class test ?

| | | | | |
|------|---|---|---|------|
| S.A. | A | N | D | S.D. |
| | | | | |

10. You pass in every class test ?

| | | | | |
|------|---|---|---|------|
| S.A. | A | N | D | S.D. |
| | | | | |

11. Latter test bring improvement than previous test ?

| | | | | |
|------|---|---|---|------|
| S.A. | A | N | D | S.D. |
| | | | | |

12. You always ask the question with teacher ?

| | | | | |
|------|---|---|---|------|
| S.A. | A | N | D | S.D. |
| | | | | |

13. You always reply the answer asked by teacher ?

| | | | | |
|------|---|---|---|------|
| S.A. | A | N | D | S.D. |
| | | | | |

14. You do discussion about study mater with your friends ?

| | | | | |
|------|---|---|---|------|
| S.A. | A | N | D | S.D. |
| | | | | |

Here,

S.A. = Strongly Agree

A = Agree

N = Neutral

D = Disagree

S.D. = Strongly Disagree

Appendix C

Question for Students

1. Mathematics teacher always keeps record of student
2. Mathematics teacher always arrives in time
3. Your sir checks homework every day
4. You do class work given by sir
5. You show class work given by sir
6. You get right mark in class work by sir
7. You take class test
8. You pass in every class test
9. Your score is high then previous class test
10. You ask the question with teacher
11. You replay the answer to question which teacher asked you
12. You have attendance in mathematics class
13. You involve in small group discussion
14. Teacher does motivation for interaction

Question for Teacher

1. How you managed the materials for teaching mathematics in your school ?
2. Which method are you use in teaching mathematics ?
3. In your opinion, what affects the student's achievement in mathematics ?
4. What types of methods you adopt for the internal evaluation of students after teaching mathematics ?

Appendix D

Guideline for Interview

1. Why your attendance is low ?
2. Why Sonaha student attendance is low ?
3. Why did not you do homework regularly ?
4. Why did not they do home work regularly ?
5. Why did you less class work ?
6. Why Sonaha students do less class work ?
7. Why your result seem poor in class test ?
8. Why Sonaha student result seem to poor in class test ?
9. Why you did less interacts with poor groups and teachers ?
10. Why Sonaha student less interacts with peer group and teacher ?
11. Do you discuss about the mathematics problem with subject teacher or not ?
12. For the practice of mathematics, how much times do you ?
13. In what does the family give more pressure to you in study or house work ?
14. Is the presence of mathematics teacher regular in the year ?
15. Does the course of mathematics complete in time ?

Appendix E

| S.N. | A | HW | CW | CT | IT | AP | AP% | AS |
|------|-----|-----|-----|-----|-----|------|------|----|
| 1 | 5 | 5 | 5 | 4.7 | 4.7 | 4.88 | 97.6 | 72 |
| 2 | 5 | 4 | 4.7 | 4.3 | 4.3 | 4.46 | 89.2 | 66 |
| 3 | 5 | 4.7 | 4.7 | 4 | 3.3 | 4.34 | 86.8 | 66 |
| 4 | 4.5 | 5 | 4.3 | 3.7 | 3.7 | 4.24 | 84.8 | 63 |
| 5 | 5 | 4.3 | 4 | 3.7 | 3.3 | 4.06 | 81.2 | 58 |
| 6 | 5 | 4 | 3.7 | 3.7 | 3 | 3.88 | 77.6 | 58 |
| 7 | 4 | 4 | 3.7 | 3.3 | 2.3 | 3.46 | 69.2 | 54 |
| 8 | 4 | 3.7 | 3.7 | 3 | 3 | 3.48 | 69.6 | 53 |
| 9 | 4 | 3.7 | 3.7 | 3 | 2.3 | 3.34 | 66.8 | 53 |
| 10 | 4 | 3.7 | 3.7 | 3 | 2.3 | 3.34 | 66.8 | 53 |
| 11 | 4 | 3.7 | 3.7 | 3 | 2.7 | 3.42 | 68.4 | 52 |
| 12 | 4 | 3.3 | 3.7 | 3 | 2.3 | 3.26 | 65.2 | 51 |
| 13 | 4 | 3.3 | 3.3 | 3 | 2.3 | 3.18 | 63.6 | 49 |
| 14 | 4 | 3.3 | 3.3 | 3 | 2.3 | 3.18 | 63.6 | 43 |
| 15 | 4 | 3 | 3.3 | 3 | 2.3 | 3.12 | 62.4 | 42 |
| 16 | 4 | 3.3 | 3.3 | 3 | 2.3 | 3.18 | 63.6 | 41 |
| 17 | 4 | 3 | 3.3 | 3 | 2.3 | 3.12 | 62.4 | 41 |
| 18 | 4 | 3 | 3 | 3 | 2.3 | 3.06 | 61.2 | 40 |
| 19 | 4 | 3.3 | 3 | 3 | 2.3 | 3.12 | 62.4 | 39 |
| 20 | 3 | 3 | 3 | 3 | 2.3 | 2.86 | 57.2 | 39 |
| 21 | 3 | 3 | 3 | 3 | 2 | 2.8 | 56 | 38 |
| 22 | 3 | 3 | 3 | 3 | 2.3 | 2.86 | 57.2 | 38 |

| | | | | | | | | |
|----|---|-----|---|---|-----|------|------|----|
| 23 | 3 | 3 | 3 | 3 | 2 | 2.8 | 56 | 36 |
| 24 | 3 | 3 | 3 | 3 | 2.3 | 2.86 | 57.2 | 35 |
| 25 | 3 | 3 | 3 | 3 | 2.3 | 2.86 | 57.2 | 35 |
| 26 | 3 | 3 | 3 | 3 | 2.3 | 2.86 | 57.2 | 35 |
| 27 | 3 | 3 | 3 | 3 | 2.3 | 2.86 | 57.2 | 35 |
| 28 | 3 | 3 | 3 | 3 | 2 | 2.8 | 56 | 34 |
| 29 | 3 | 3 | 3 | 3 | 1.7 | 2.74 | 54.8 | 33 |
| 30 | 3 | 3 | 3 | 3 | 2 | 2.8 | 56 | 33 |
| 31 | 3 | 3 | 3 | 3 | 2 | 2.8 | 56 | 32 |
| 32 | 3 | 3 | 3 | 3 | 2 | 2.8 | 56 | 32 |
| 33 | 3 | 3 | 3 | 3 | 2 | 2.8 | 56 | 32 |
| 34 | 3 | 3 | 3 | 3 | 2 | 2.8 | 56 | 32 |
| 35 | 3 | 3 | 3 | 3 | 2 | 2.8 | 56 | 31 |
| 36 | 3 | 3 | 3 | 3 | 2 | 2.8 | 56 | 31 |
| 37 | 3 | 3 | 3 | 3 | 2 | 2.8 | 56 | 31 |
| 38 | 3 | 3 | 3 | 3 | 2 | 2.8 | 56 | 31 |
| 39 | 3 | 3 | 3 | 3 | 2 | 2.8 | 56 | 31 |
| 40 | 3 | 3 | 3 | 3 | 1.7 | 2.74 | 54.8 | 31 |
| 41 | 3 | 3 | 3 | 3 | 1.7 | 2.74 | 54.8 | 30 |
| 42 | 3 | 3 | 3 | 3 | 2 | 2.8 | 56 | 30 |
| 43 | 3 | 3 | 3 | 3 | 2 | 2.8 | 56 | 30 |
| 44 | 3 | 3 | 3 | 3 | 2 | 2.8 | 56 | 30 |
| 45 | 3 | 2.7 | 3 | 3 | 2 | 2.74 | 54.8 | 30 |
| 46 | 3 | 3 | 3 | 3 | 1.7 | 2.74 | 54.8 | 30 |

| | | | | | | | | |
|----|---|-----|-----|-----|-----|------|------|----|
| 47 | 3 | 3 | 3 | 3 | 1.7 | 2.74 | 54.8 | 30 |
| 48 | 3 | 3 | 3 | 3 | 1.7 | 2.74 | 54.8 | 30 |
| 49 | 3 | 3 | 3 | 2.7 | 1.7 | 2.68 | 53.6 | 29 |
| 50 | 3 | 3 | 3 | 2.3 | 2 | 2.66 | 53.2 | 29 |
| 51 | 3 | 3 | 3 | 2.3 | 2 | 2.66 | 53.2 | 29 |
| 52 | 3 | 3 | 3 | 2.3 | 1.7 | 2.6 | 52 | 29 |
| 53 | 3 | 3 | 3 | 2.3 | 1.7 | 2.6 | 52 | 29 |
| 54 | 3 | 2.7 | 3 | 2.3 | 1.7 | 2.54 | 50.8 | 29 |
| 55 | 3 | 3 | 3 | 2.3 | 1.3 | 2.52 | 50.4 | 29 |
| 56 | 3 | 3 | 3 | 2.3 | 1.3 | 2.52 | 50.4 | 28 |
| 57 | 3 | 3 | 2.7 | 2.3 | 1.3 | 2.46 | 49.2 | 28 |
| 58 | 3 | 3 | 2.7 | 2.3 | 1.7 | 2.54 | 50.8 | 28 |
| 59 | 3 | 3 | 2.7 | 2.3 | 1.7 | 2.54 | 50.8 | 27 |
| 60 | 3 | 3 | 2.7 | 2.3 | 1.3 | 2.46 | 49.2 | 27 |
| 61 | 3 | 3 | 2.7 | 2 | 1.7 | 2.48 | 49.6 | 27 |
| 62 | 3 | 2.7 | 2.7 | 2 | 1.3 | 2.34 | 46.8 | 27 |
| 63 | 3 | 3 | 2.7 | 2 | 1.3 | 2.4 | 48 | 27 |
| 64 | 3 | 2.7 | 2.7 | 2 | 1.3 | 2.34 | 46.8 | 26 |
| 65 | 3 | 3 | 2.7 | 2 | 1.3 | 2.4 | 48 | 26 |
| 66 | 3 | 3 | 2.7 | 2 | 1.3 | 2.4 | 48 | 26 |
| 67 | 3 | 2.7 | 2.7 | 2 | 1.3 | 2.34 | 46.8 | 26 |
| 68 | 3 | 3 | 2.7 | 2 | 1.3 | 2.4 | 48 | 24 |
| 69 | 3 | 3 | 2.7 | 2 | 1 | 2.34 | 46.8 | 23 |
| 70 | 3 | 3 | 2.7 | 2 | 1 | 2.34 | 46.8 | 23 |

| | | | | | | | | |
|----|-----|-----|-----|-----|-----|------|------|----|
| 71 | 3 | 2.3 | 2.3 | 2 | 1.3 | 2.18 | 43.6 | 23 |
| 72 | 3 | 2.3 | 2 | 2 | 1.3 | 2.12 | 42.4 | 23 |
| 73 | 3 | 2.7 | 2 | 2 | 1.3 | 2.2 | 44 | 22 |
| 74 | 3 | 2.3 | 2 | 1.7 | 1.3 | 2.06 | 41.2 | 22 |
| 75 | 3 | 2 | 2 | 1.7 | 1 | 1.94 | 38.8 | 22 |
| 76 | 2.5 | 2 | 2 | 1.7 | 1.3 | 1.9 | 38 | 21 |
| 77 | 2.5 | 2 | 2 | 1.7 | 1.3 | 1.9 | 38 | 21 |
| 78 | 2.5 | 2 | 2 | 1.7 | 1.3 | 1.9 | 38 | 21 |
| 79 | 2.5 | 2 | 2 | 1.7 | 1.3 | 1.9 | 38 | 21 |
| 80 | 2.5 | 2 | 2 | 1.7 | 1 | 1.84 | 36.8 | 20 |
| 81 | 2 | 2 | 2 | 1.7 | 1.3 | 1.8 | 36 | 20 |
| 82 | 2 | 2 | 2 | 1.3 | 1.3 | 1.72 | 34.4 | 20 |
| 83 | 2 | 2 | 2 | 1.3 | 1 | 1.66 | 33.2 | 18 |
| 84 | 2 | 2 | 2 | 1.3 | 1 | 1.66 | 33.2 | 18 |
| 85 | 2 | 1.7 | 2 | 1.3 | 1 | 1.6 | 32 | 17 |
| 86 | 2 | 2 | 2 | 1 | 1 | 1.6 | 32 | 17 |
| 87 | 2 | 2 | 1.7 | 1 | 1 | 1.54 | 30.8 | 17 |
| 88 | 2 | 1 | 1.7 | 1.3 | 1 | 1.4 | 28 | 15 |
| 89 | 2 | 1.7 | 1.3 | 1 | 1 | 1.4 | 28 | 14 |
| 90 | 2 | 1.3 | 1.3 | 1.3 | 1 | 1.38 | 27.6 | 14 |
| 91 | 2 | 1.3 | 1.3 | 1 | 1 | 1.32 | 26.4 | 12 |
| 92 | 1.5 | 1.3 | 1.3 | 1 | 1 | 1.22 | 24.4 | 11 |
| 93 | 1.5 | 1 | 1 | 1 | 1 | 1.1 | 22 | 9 |
| 94 | 1 | 1 | 1 | 1 | 1 | 1 | 20 | 7 |

| | | | | | | | | |
|---------|------|------|------|------|------|------|-------|-------|
| 95 | 1 | 1 | 1 | 1 | 1 | 1 | 20 | 6 |
| 96 | 1 | 1 | 1 | 1 | 1 | 1 | 20 | 5 |
| 97 | 1 | 1 | 1 | 1 | 1 | 1 | 20 | 4 |
| 98 | 1 | 1 | 1 | 1 | 1.3 | 1.06 | 21.2 | 4 |
| 99 | 1 | 1 | 1 | 1 | 1.3 | 1.06 | 21.2 | 3 |
| 100 | 1 | 1 | 1 | 1 | 1 | 1 | 20 | 1 |
| Average | 2.94 | 2.73 | 2.69 | 2.39 | 1.77 | 2.50 | 50.06 | 29.83 |

Where,

A = Attendance

HW = Homework

CW = Class work

CT = Class test

IT = Interaction

AP = Average Participation

AP% = Average Participation Percentage

AS = Achievement Score

Appendix F

Interpretation of correlation coefficient

| Coefficient | Relationship |
|--------------|----------------|
| 0.00 to 0.20 | Negligible |
| 0.20 to 0.40 | Low |
| 0.40 to 0.60 | Moderate |
| 0.60 to 0.80 | Substantial |
| 0.80 to 1.00 | High very high |

Sources : Best J.W and Kahn J.V.P. 308

Appendix G

Result of Participation and Achievement

Descriptive Statistics

| | N | Minimum | Maximum | Mean | Std. deviation | Variance |
|-------------------|-----|---------|---------|-------|-------------------|----------|
| Participation (x) | 100 | 20.00 | 100.00 | 50.06 | 15.8989 | 252.78 |
| Achievement (y) | 100 | 1.00 | 72.00 | 29.83 | 14.24 | 202.78 |

Correlation

| | | Participation (x) | Achievement (y) |
|-------------------|---------------------|-------------------|-----------------|
| Participation (x) | Pearson correlation | 1 | 0.972** |
| | Sig. (2-tailed) | | 0.000 |
| | N | 100 | 100 |
| Achievement (y) | Pearson correlation | 0.972** | 1 |
| | Sig. (2-tailed) | 0.000 | |
| | N | 100 | 100 |

** Correlation is significant at the 0.01 level.